

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee. Authorization for this examiner's amendment was given in a telephone interview with Justin Jardine on 03/02/11.

The application has been amended as follows:

In the Claims

2. In claim 21, line 15, "the first aperture" has been changed to -- a first aperture --
3. In claim 21, line 16, "a first aperture" is changed to --the first aperture--;
4. In re claim 21 line 29, "the cylinder" is changed to --the vertically oriented cylinder--
5. In re claim 25 line 2, "the cylinder" is changed to --the vertically oriented cylinder--;
6. In re claim 35 line 12, "the cylinder" is changed to --the vertically oriented cylinder--;
7. In re claim 40 line 2, "the apparatus" is changed to --the piston-type pumping apparatus--;
8. In re claim 48, line 1,"claim 42" is changed to -- claim 44 --;

Art Unit: 3746

9. In claims 31, 44, 51 and 53, line 1, "a pump" has been changed to --a hydraulic pump--;
10. In claims 32,33,34,45,46,47,52 line 1, " the pump" has been changed to --the hydraulic pump--;
11. The above change is made to put the claim in allowable condition.

Allowable Subject Matter

12. The following is an examiner's statement of reasons for allowance per MPEP 1302

13. Claims 21-25, 27, 29, 31-53 are deemed to be directed to a non-obvious Improvement over Warren (1616774) and Danielsson (5984642).

14. Independent claims 21, 35, 42 and 50 are directed to an apparatus and method of pumping a fluid. The apparatus as claimed comprises a main piston and hollow piston rod attached to the main piston both of which reciprocate inside a vertically oriented hollow cylinder. An external pump supplies hydraulic fluid to two passageways connected to a top and bottom surface of the piston and it is In response to the hydraulic pressure that the piston moves up or down. Furthermore a transfer chamber is selayingly attached to the top of the vertically oriented cylinder at a position radially spaced apart from a first aperture and wherein the piston rod does not contact an interior side surface of the transfer chamber. In addition the hollow piston rod comprises a first one-way valve to allow fluid from the hollow piston rod into the transfer chamber. A discharge chamber located above the transfer chamber is in communication with the same

Art Unit: 3746

via another one way valve. A reload chamber is also located below the vertically oriented cylinder so that the bottom portion of the hollow piston rod will reciprocate through a second aperture in the cylinder. Finally a third one way valve located in the reload chamber to allow fluid flow into the reload chamber from outside the pumping apparatus. Warren teaches similar piston type fluid pressure intensifier and discloses similar valves, piston, hollow piston rod, transfer chamber and reload chamber. But Warren fails to teach that the transfer chamber is sealingly attached to the top of the vertically oriented cylinder at a position radially spaced apart from a first aperture. And most importantly fail to teach that the hollow piston rod does not contact an interior surface of the transfer chamber. In Warren the hollow plunger 's end contacts chamber 43 and consequently also fails to disclose that an inside diameter of the cylinder is greater than an inside diameter of the reload chamber and wherein the transfer chamber is sealingly attached to the cylinder at a location spaced apart from a first aperture .Although Danielsson teaches a piston device having an inside diameter of the cylinder is greater than an inside diameter of the reload chamber and wherein the transfer chamber is sealingly attached to the cylinder at a location spaced apart from a first aperture, Danielsson or other prior art of record fail to disclose or to fairly teach a hollow piston rod that does not contact an interior surface of the transfer chamber .Thus In the examiner's opinion, it would not have been obvious to a person of ordinary skill in the art to modify the pumps of Warren or Danielsson to arrive at Applicant's claimed invention.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amene S. Bayou whose telephone number is 571-270-3214. The examiner can normally be reached on Monday-Thursday, 7:30-4:00.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571)272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 3746

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/Amene S Bayou/

Examiner, Art Unit 3746